

THE SEARCH FOR HEALTH

A Report from
The National Institutes of Health
Bethesda, Maryland



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No Excess Mortality Risk Found in Counties With Nuclear Facilities

A two-year National Cancer Institute county survey showed no increased risk of death from cancer for people living in 107 U.S. counties containing or close to 62 nuclear facilities. Included were 52 commercial nuclear power plants, nine Department of Energy research and weapons plants, and one commercial fuel-reprocessing plant. The facilities in the survey had all begun operation before 1982.

The NCI researchers examined deaths from 16 types of cancer, including leukemia. In the counties with nuclear facilities, cancer death rates before and after the startup of the facilities were compared to cancer rates in 292 similar counties without nuclear facilities (control counties).

The NCI survey showed that, in comparison to the control counties, some of the study counties had higher rates of certain cancers and some had lower rates, either before or after the facilities came into service. None of the differences that were observed could be linked to the presence of nuclear facilities. "From the data at hand, there was no convincing evidence of any increased risk of death from any of the cancers we surveyed due to living near nuclear facilities," said John Boice, Sc.D., chief of NCI's Radiation Epidemiology Branch.

Be cautioned, however, that the size of the counties may be too large to detect risks present only in limited areas around the plants. "No study can prove the absence of an effect," said Dr. Boice. "But if any excess cancer risk due to radiation pollution is present in counties with nuclear facilities, the risk is too small to be detected by the methods used."

*NIH is an operating agency of the
U.S. Department of Health and
Human Services*

The NCI scientists surveyed over 900,000 cancer deaths in the study counties using county mortality records collected from 1950 to 1984. The researchers evaluated changes in mortality rates for 16 types of cancer in these counties from 1950 until the facility began operation and from start of operation until 1984.

For each of the 107 study counties, three counties that had populations similar in income, education, and other socioeconomic factors, but did not have or were not near nuclear facilities, were chosen for comparison. The study and control counties were within the same geographic region and usually within the same state. Over 1,800,000 cancer deaths were surveyed in the control counties.

Analysis and comparison of the number of cancer deaths in the study and control counties determined the relative risk (RR) of dying from cancer for persons living near a nuclear facility. A relative risk of 1.00 means that the risk of dying from cancer was the same in the study and control counties; any number below 1.00 indicates that the overall risk was lower in the study county than in the control county; and any number greater than 1.00 indicates a higher risk in the study county.

For childhood leukemia in children ages 0 through 9 years, the overall RR comparing study and control counties before the startup of the nuclear facilities was 1.08; after startup the RR was 1.03. These data indicate that the risk of childhood leukemia in the study counties was slightly greater before startup of the nuclear facilities than after.

For leukemia at all ages, the RRs were 1.02 before startup and 0.98 after. These results provide no evidence that the presence of nuclear facilities influenced cancer death rates in the study counties.

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